

A new species of *Paramorphocoris* (Hemiptera: Aradidae) from China

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Abstract: A new species, *Paramorphocoris hubeiensis* Bai & Heiss **sp. nov.** from Hubei Province, China, is described. The new species is similar to *Paramorphocoris henanensis* Bai & Heiss, 2015, but differs from the latter by the postocular lobes with a larger subrounded granular tubercle; anterolateral lobes of pronotum shorter and more rounded; median ridge of meso- and metanotum with a distinct longitudinal sulcus, laterally with several thin oblique carinae; antennae slightly shorter, segment III longer than I. Diagnostic morphological features of the new species are illustrated. A key to species of *Paramorphocoris* is also provided.

Key words: Aradoidea; flat bugs; taxonomy; key

中国副形扁蝽属一新种（半翅目：扁蝽科）

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摘要：描述中国湖北扁蝽科1新种，湖北副形扁蝽 *Paramorphocoris hubeiensis* Bai & Heiss **sp. nov.**。该种和河南副形扁蝽 *Paramorphocoris henanensis* Bai & Heiss, 2015 相似，但与后者的区别为眼后突具大的粒状瘤；前胸背板前侧突短、钝圆状；中、后胸背板中脊具纵中缝线，中脊侧缘面具细的斜纹；触角相对较短，第3节长于第1节。新种的鉴别特征有图示说明。提供副形扁蝽属 *Paramorphocoris* 的分种检索表。

关键词：扁蝽总科；扁蝽；分类；检索表

Introduction

The Aradidae fauna of the subfamily Carventinae from China is still poorly studied, with

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only eleven genera recorded to date from the country. Eleven genera and 21 species are apterous: *Caiaptera* Bai & Heiss, 2011 (1 sp.); *Cathaycoris* Bai, Heiss & Cai, 2017 (1 sp.); *Crassocoris* Bai, Heiss & Cai, 2007 (1 sp.); *Paralibiocoris* Bai, Heiss & Cai 2018a (4 sp.); *Neocrassocoris* Bai, Heiss & Cai, 2019 (2 sp.); *Notoplocaptera* Usinger & Matsuda, 1959 (2 sp.); *Paramorphocoris* Bai & Heiss, 2015 (1 sp.); *Paracrassocoris* Bai, Heiss & Cai, 2018b (1 sp.); *Rotundocoris* Bai, Heiss & Cai, 2019 (2 sp.); *Taiwanaptera* Heiss & Nagashima, 2008 (3 sp.) and *Vietnamaptera* Zhang, Bai, Heiss & Cai, 2010 (3 sp.). Two genera and five species are macropterous: *Carventus* Stål, 1865 (4 sp.) and *Lissonotocoris* Usinger & Matsuda, 1959 (1 sp.).

The type species of *Paramorphocoris henanensis* Bai & Heiss, 2015 was from Henan Province, China. The second species *Paramorphocoris hubeiensis* **sp. nov.** described here is from Hubei Province, China.

Material and methods

This study is based on the type specimen preserved in the Entomological Museum of the Inner Mongolia Normal University, Hohhot (IMNU). For the study of body structures, the incrustate specimen was cleaned. Photos were taken with Keyence VHX-1000 equipment.

Measurements were obtained using a calibrated micrometer. All measurements are in millimeters. The abbreviation: deltg — dorsal external laterotergite (connexivum); mtg — mediotergite.

Taxonomy

Paramorphocoris Bai & Heiss, 2015

Type species of genus: *Paramorphocoris henanensis* Bai & Heiss, 2015.

Key to species of *Paramorphocoris* (female holotypes)

1. Larger size, body length 5.75 mm; postocular lobes with a larger subrounded granular tubercle (Figs 1, 2); anterolateral lobes of pronotum shorter and more rounded (Figs 4, 5); median ridge of meso- and metanotum with a distinct longitudinal sulcus, laterally with several thin oblique carinae (Figs 5, 8); median groove of mtg I and II with two thin longitudinal carina at bottom; antennae slightly shorter, 1.9 times width of head, segment III longer than I (Hubei)..... *P. hubeiensis* **sp. nov.**
- . Smaller size, body length 4.95 mm, postocular lobes subparallel with few conical setigerous tubercles (Fig. 3); anterolateral lobes of pronotum longer, angularly produced anteriorly (Fig. 6); median ridge of meso- and metanotum without distinct longitudinal sulcus and thin lateral carinae (Fig. 9); antennae slightly longer, 1.93 times width of head, segment III as long as I (Henan)..... *P. henanensis* Bai & Heiss

Paramorphocoris hubeiensis Bai & Heiss **sp. nov.** (Figs 1, 2, 4, 5, 7, 8)

Description of female holotype. Apterous; body blackish brown; antennae and legs beset with adpressed setae, head, thorax and connexivum granulate and irregularly carinate.

Head. Longer than wide across eyes (1.06/0.89); genae slightly notched anteriorly, reaching basal 1/3 of antennal segment I; clypeus strongly raised anteriorly with a tubercle near apex; antenniferous tubercles short, dilated, apices acute; antennae 1.9 times as long as

width of head; length of antennal segments I to IV = 0.63 : 0.33 : 0.69 : 0.40; eyes convex and granulate; postocular tubercles small and not reaching lateral margin of eyes, postocular borders constricted posteriorly; vertex with Y-shaped granulate carinae flanked by two large, ovate infraocular callosities; rostrum short, rostral groove narrow and deep, closed posteriorly.

Thorax. Pronotum. 2.62 times as wide as long (1.39/0.53); collar smooth, ring-like; anterolateral angles rounded and granular, only slightly produced beyond collar; disc with a median groove, lateral sclerites with oblique rugosities and a conical tubercle bordered by granulate margins; posterior margin of pronotum slightly convex, separated from mesonotum by a deep furrow.

Mesonotum. Wider than pronotum (1.78/1.39); separated laterally from metanotum by very deep furrows; scutellum disappeared, median elongate ridge extending to metanotum, subrounded and depressed anteriorly, truncate and raised posteriorly, flanked by deep furrows and oblique thin carinae; lateral oval plates with irregular carinae and tubercles, the lateral margins carinate and granulate with angulate humeri.

Metanotum. Wider than mesonotum (2.18/1.78); median ridge deeply depressed laterally followed by rugose sclerites with granulate lateral margins.

Mtg I + II. Mtg I + II fused, forming high transverse ridges separated medially by a wide, deep depression with two thin longitudinal carinae at its bottom; lateral sclerites depressed and irregularly wrinkled; elevated mtg II sloping posteriorly and sideways, posterior margin carinate.

Abdomen. Tergal plate consisting of mtg III to VI; anterior margin slightly produced medially, posterior margin truncate, lateral margins slightly rounded; mtg III with a thin median carina, mtg IV with a pentagonal elevation; scent gland openings distinct; laterally of median ridge with a usual pattern of large and small callous spots; connexiva subhorizontal, deltg II and III completely fused, others separated by fine sulci, posterolateral angles of deltg V to VII progressively protruding; paratergites VIII dentiform, reaching basal 2/3 of segment IX.

Venter. Prosternum raised and with Y-shaped median carina depressed laterally; meso- and metasterna flattened at middle, disc with a subround deep median depression and distinct conical processes reaching coxae; sterna III to VI raised and carinate along posterior border, depressed anteriorly, with triangular smooth spots medially, flanked by the usual pattern of round callous spots; spiracles II to IV ventral, V to VII lateral and visible from above, VIII terminal.

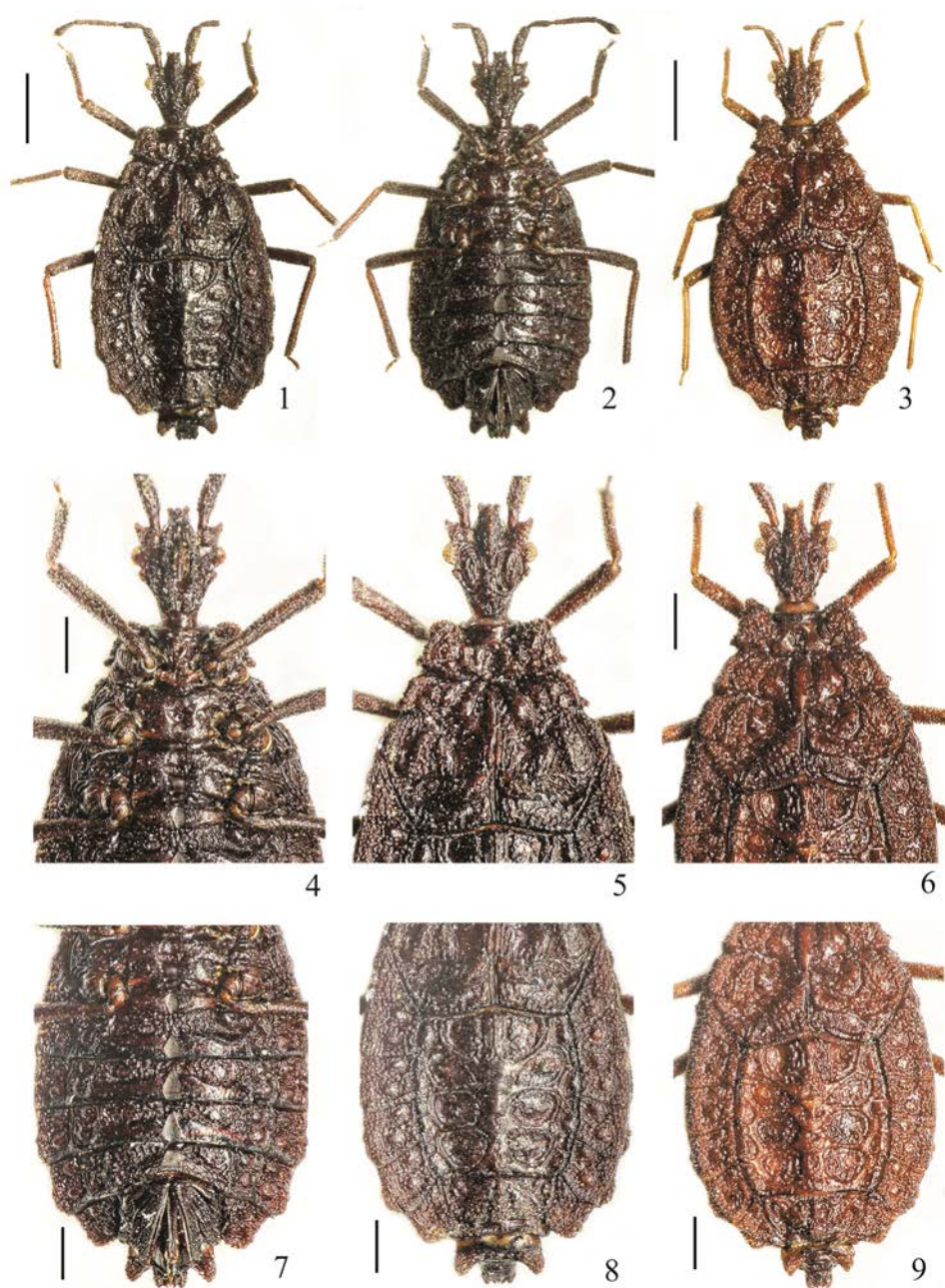
Legs. Slender, (in mm) preapical comb on fore tibia present, claws with fine pulvilli.

Measurements. Female ($n = 1$). Body length 5.75; maximal width of abdomen 2.7. Length of head 1.06, width 0.89. Length pronotum 0.53, width 1.39. Width of mesonotum 1.78. Width of metanotum 2.18. Length antennal segments I–IV = 0.63 : 0.33 : 0.69 : 0.40.

Holotype. ♀, **China**, Wufeng, Yichang, Hubei Province, 29-IV-2014, Xiaoshuan BAI leg. (IMNU). This specimen is designated and labeled accordingly.

Diagnosis. The new species can be distinguished from *Paramorphocoris henanensis* Bai & Heiss, 2015 by the set of characters given in the key.

Etymology. This specific epithet refers to the holotype locality.



Figures 1–9. 1, 2, 4, 5, 7, 8. *Paramorphocoris hubeiensis* **sp. nov.**; 3, 6, 9. *Paramorphocoris henanensis*. 1, 2. Holotype female, habitus, dorsal and ventral views; 3. Habitus, dorsal view; 4, 5. Head and thorax, dorsal and ventral views; 6. Head, thorax and abdomen, dorsal views; 7, 8, 9. Abdomen, dorsal and ventral views. Scale bars = 1 mm (Figs 1–3); 0.5 mm (Figs 4–9).

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